S. HRG. 100-359

U.S.-JAPAN SCIENCE AND TECHNOLOGY AGREEMENT

HEARING

BEFORE THE

SUBCOMMITTEE ON SCIENCE, TECHNOLOGY, AND SPACE

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

FIRST SESSION

ON

UNITED STATES AND JAPAN SCIENCE AND TECHNOLOY AGREEMENT

OCTOBER 15, 1987

Printed for the use of the
Committee on Commerce, Science, and Transportation

U.S. GOVERNMENT PRINTING OFFICE

80-951 O WASHINGTON : 1988

S261-17

For sale by the Superintendent of Documents, Congressional Sales Office

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ERNEST F. HOLLINGS, South Carolina, *Chairman*

DANIEL K. INOUYE, Hawaii
WENDELL H. FORD, Kentucky
DONALD W. RIEGLE, JR., Michigan
J. JAMES EXON, Nebraska
ALBERT GORE, JR., Tennessee
JOHN D. ROCKEFELLER IV, West Virginia
LLOYD BENTSEN, Texas
JOHN F. KERRY, Massachusetts
JOHN B. BREAUX, Louisiana
BROCK ADAMS, Washington

JOHN C. DANFORTH, Missouri
BOB PACKWOOD, Oregon
NANCY LANDON KASSEBAUM, Kansas
LARRY PRESSLER, South Dakota
TED STEVENS, Alaska
ROBERT W. KASTEN, JR., Wisconsin
PAUL S. TRIBLE, JR., Virginia
PETE WILSON, California
JOHN MCCAIN, Arizona

RALPH B. EVERETT, *Chief Counsel and Staff Director*
W. ALLEN MOORE, *Minority Chief of Staff*

SUBCOMMITTEE ON SCIENCE, TECHNOLOGY, AND SPACE

DONALD W. RIEGLE, JR., Michigan, *Chairman*

ALBERT GORE, JR., Tennessee
JOHN D. ROCKEFELLER IV, West Virginia
LLOYD BENTSEN, Texas
JOHN F. KERRY, Massachusetts
BROCK ADAMS, Washington

LARRY PRESSLER, South Dakota
NANCY LANDON KASSEBAUM, Kansas
PAUL S. TRIBLE, JR., Virginia
PETE WILSON, California

CONTENTS

Page

Opening statement by Senator Rockefeller 1

LIST OF WITNESSES

Graham, Dr. William R., White House Science Advisor and Director, Office of Science and Technology Policy, Executive Office of the President 15
Negroponte, John D., Assistant Secretary of State, Oceans and International Environmental and Scientific Affairs, Department of State 21
Norris, William C., chairman emeritus, Control Data Corp 3
Prestowitz, Clyde, Carnegie Endowment 26
Smart, Hon. Bruce, Acting Secretary of Commerce and Under Secretary of Commerce for International Trade, Department of Commerce 11

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

Valentine, Charles F., article 35

U.S.-JAPAN SCIENCE AND TECHNOLOGY AGREEMENT

THURSDAY, OCTOBER 15, 1987

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
SUBCOMMITTEE ON SCIENCE, TECHNOLOGY, AND SPACE,
Washington, D.C.

The subcommittee met at 2:05 p.m. in room SR-253, Russell Senate Office Building, Hon. John D. Rockefeller IV presiding.

Staff members assigned to this hearing: Pat Windham, professional staff member; and Mark Farrell, minority profesional staff member.

OPENING STATEMENT BY SENATOR ROCKEFELLER

Senator ROCKEFELLER. The hearing will come to order of the Science, Technology, and Space Subcommittee.

Today the subcommittee meets to discuss an agreement that is being negotiated this very weekend, in fact, in Washington, DC, and that is the U.S.-Japan Science and Technology Agreement.

This Saturday a Japanese delegation is coming to town to kick off the first rounds of the negotiation of an umbrella science and technology agreement that would revamp, perhaps, many of the technology agreements that we make with Japan in the future.

First, let me say that one of the purposes of this hearing is not to punch holes in the details of the U.S. proposal.

And it is not to get involved in a discussion of matters which might be confidential, as, for example, the negotiations are confidential, and we will respect all these considerations. It would be unfair to our witnesses, in fact, to try to ask them to divulge confidential information.

I will add, however, that it is very much the purpose of today's hearing to highlight the importance and the meaning of the U.S.-Japan Science and Technology Agreement, as we await the Japanese delegation's arrival in Washington on Saturday.

In 1980, the U.S. and Japan first entered into an umbrella science and technology accord. This arrangement, while well-intentioned, was most definitely limited in scope, and short on detail.

Consequently, the 1980 accord, which expires on October 31st of this year, had very little impact on the course of U.S.-Japan science and tech arrangements.

Additionally, I think it is fair to say that times have very much changed for both the United States and Japan. Japan has become a developer of world-class science and technology.

Global change has forced us in our country to rethink our way in terms of how we value science and technology. To date, we in America have shared the fruits of our excellent basic science research with scientists from around the globe.

Our Federal laboratories have long opened their doors to researchers from around the globe. Our universities have welcomed international scientists and our science publications have been available for all the world to use.

And I believe, for the most part, that our open door policy has been the right one. However, our approach has not always been reciprocated.

For example, in 1986 Japan had 323 researchers working at the National Institutes of Health. We, for our part, had three NIH researchers in Japan. These Japanese researchers who are here were supported entirely by U.S. government funds for periods up to three years.

Now, it is fair, however, to say that there are steps being taken in Japan to increase foreign access to Japanese research and development efforts, and to redress the tremendous imbalance in Japan's R&D presence in the United States.

For instance, since 1983 most of Japan's universities have, in fact, been open to foreign research visits. Japan has begun to open up its government aided laboratories to American visitors.

I am pleased to see that these steps have been taken. But the question is, is the progress enough? Most of Japan's best research is performed in multi-company research laboratories supported by the Ministry of International Trade and Industry, and other government agencies.

Japan just does not have the equivalent of our National Bureau of Standards or Los Alamos. So the question is, how does Japan contribute its fair share in return for access to our best government-supported science and technology?

There are many factors involved in the R&D imbalance, including the fact that must be confronted squarely, that most American researchers do not speak or read the Japanese language.

Nevertheless, the lopsided relationship is not acceptable. The United States can no longer afford this one-sided relationship. This is particularly true in the science and technology area. We are talking about the foundation of economic prosperity for the next generation.

Congress clearly understands this fact. Last year Senator Dole and I co-authored an amendment for the Federal Technology Transfer Act.

This amendment allows the directors of Federal research labs to deny access, in fact, to researchers from countries, including Japan, which refuse to make information on their own government-sponsored research available to Americans.

Optimally, we would not want to restrict foreign participation in our Federal labs. Nor do we want to change our Nation's approach, which is very open, to technology flow.

I think all of us would prefer to see other nations, particularly Japan, voluntarily open the doors to their top-flight laboratories and encourage foreign scientists. The time has come, however, to make some meaningful changes in the way that we exchange scientific and technical information with Japan.

A rewrite of the existing U.S.-Japan Science and Technology Agreement will certainly not be an easy task. The Japanese are happy with the relatively toothless 1980 agreement, and see no reason to change the status quo.

However, I would strongly encourage the government of Japan to sign a science and tech accord, based on the principles of balanced equivalence and shared responsibilities.

The science and technology relationship between the United States and Japan must become a two-way street, and it is an exceedingly important relationship.

Now, we are fortunate today to have a very distinguished set of witnesses from both the executive branch and from outside. Because of particular scheduling problems, Mr. William Norris, Bill Norris, Chairman Emeritus of Control Data, and somebody who in fact was the intellectual inspiration for the Dole-Rockefeller amendment will be our first witness.

Bill is a leading business advocate of greater reciprocity in U.S.-Japanese relations. And has been for a long time.

Then there will be a distinguished panel of Administration witnesses. And then one additional witness.

This is an important hearing on a technical subject of great dimension for the relations of our two countries, a relationship not often explored, but one that I think needs to be and will be, in part, this afternoon.

I would call, however, first on Senator Adams, to see if he has any comments that he would like to make.

Senator ADAMS. Mr. Chairman, I agree with your comments that this is an exceedingly important hearing on a very technical part of the relationships between the United States and Japan, and I look forward to hearing it.

I echo many of the comments that you have made. And I will reserve an opening statement until a later point, so that we may proceed with the witnesses.

Senator ROCKEFELLER. Thank you, Senator Adams. Bill Norris, if you could come forward. I give you due credit for your intellectual authorship of that amendment, plus many other things that you have done.

STATEMENT OF WILLIAM C. NORRIS, CHAIRMAN EMERITUS, CONTROL DATA CORPORATION

Mr. NORRIS. Thank you, Senator.

Senator ROCKEFELLER. You can deny it if you want.

Mr. NORRIS. I will accept it gratefully and gladly. Well, it is a great pleasure to be here.

As I guess you know, Control Data is headquartered in Minneapolis, and having been an advocate of international technological cooperation for more than 20 years, I do sincerely appreciate the opportunity to testify here today.

Cooperation is and should be the goal of U.S.-Japan relations in the area of science and technology. And regrettably, we are far short of having the necessary level of technological cooperation.

We have preponderantly a one-way outflow of basic science and technology from the United States to Japan. American research and development has undergirded the so-called Japanese economic miracle, and have boomeranged in the form of a huge merchandise trade deficit with Japan.

And in considering the terms of the proposed agreement, it must be kept in mind that technology is the pivotal element in competitiveness. Hence, technology is a key trade issue.

Most Americans view trade simply in terms of just goods and services, yet an imbalance today in technology flow translates into a decrease in the future level of competitiveness. The technology flow will become even more significant as a trade issue, as we progress further into the information age.

Even though the headlines do not deal very much with the trade in technology, it is becoming more obvious every day that our adverse trade balance has as a root cause inequitable technology flows between the United States and Japan.

A fairly recent report prepared for the President's Commission on Industrial Competitiveness concluded, and I quote from it, "A glaring asymmetry characterizes the international flow of technological knowledge and finds that the flow has been preponderantly out from the United States."

Now, because technology flow seems to be a precursor of trade in the opposite direction, any inequities in such flows adversely affect trade balances. In other words, a gap in technology flow with Japan in the 1970s underlies the trade gap in the 1980s, and a technology gap in the 1980s will perpetuate a gap into the 1990s.

The point is obvious. For too many years, America has been providing Japan with virtually unlimited access to our technology. We are not accorded similar opportunities. And this unequal flow of technical know-how, whatever you want to call it, is what I call the one-way syndrome. And it simply must stop.

Specifically, with respect to Japan, the most recent studies that I could find indicate in recent years the Japanese have enjoyed a five-to-one advantage over the United States in electronics technology exchange and a seven-to-one advantage in the machine tools area.

In other words, the United States has transferred five times as much electronics technology to Japan as it has acquired from Japan.

Furthermore, fully 70 percent of Japan's worldwide technology imports have come from the United States. They depend heavily on the United States for the leading edge technology incorporated in their exports worldwide.

An equitable flow or exchange of technology can be mutually beneficial to both countries by helping to maintain a fair relationship in trade. A partial list of reasons for the serious imbalance includes the following.

First, Japan is not performing its fair share of the basic research that adds to the world's store of knowledge. Yet, as you, Mr. Chairman, noted earlier, Japan has virtually unlimited access to U.S. research.

Government laboratories and cooperative projects involving the government and private companies carry out a significant part of Japan's meager basic research. Their activities are effectively closed to U.S. companies.

Further, there is widespread belief in this country that the Japanese do not share their research results to the extent that the United States does, especially in such fields as ceramics, optics, and advanced manufacturing.

U.S. firms have not acquired the rights to technologies developed in Japan based on U.S. science, in large part because policies of the Japan Fair Trade Commission inhibit grant-back agreements.

That is, such agreements give the originator of the technology rights to exploit improvements in the technology made by the party to whom it was transferred.

Japan obtains much of its technology through small U.S. companies in one of three methods. Licensing, equity investment, and acquisition of the total company. And the United States does not have similar opportunities in Japan.

The Japanese send their best graduate students to the United States to obtain Ph.D.'s. The United States provides financial as well as intellectual support for many of them. On the other hand, larger U.S. corporations have not sought foreign technology as diligently as they should have.

Moves are underway in both countries to address the imbalance in technology flow. In Japan, the Science and Technology Agency has submitted a recommendation for legislation to make technology developed in government laboratories more accessible to foreigners.

In the U.S. last year, and this was noted earlier, Senators Rockefeller and Dole amended the Stevenson-Wydler Technology Innovation Act of 1980 (to facilitate technology transfer from U.S. Government labs) to give Federal laboratory directors discretionary authority to deny access to U.S. research by organizations of any foreign country that do not grant similar privileges to American organizations.

Also, I strongly support legislation, included in the Omnibus Trade Bill, that would establish equitable technology flow as a priority in trade negotiations.

Further progress was made at a meeting I attended in Kyoto, Japan last November, under the aegis of the U.S. National Academy of Science and Engineering and the Japan Society for the Promotion of Science. At that meeting it was agreed that symmetrical access to technological resources was essential.

The sense of the meeting, which included leaders in science and industry from both nations, was summed up by Harold Brown, the former U.S. Secretary of Defense, who said, and I quote, "We believe this concept of symmetrical rather than identical access to a broad range of high technology resources is what has been missing in previous discussions of U.S.-Japan trade matters, which have concentrated heavily on markets."

While the foregoing actions are steps in the right direction, much remains to be done before equitable flow is achieved. And Mr. Chairman, this is the reason why the extension of the U.S.-Japan Science and Technology Agreement is so important.

Accordingly, I believe that the agreement should stipulate that equity should be accepted as the fundamental precepts of joint projects and other general arrangements.

And secondly, that Japan should make every effort to assure greater participation by U.S. scientists in their government-funded research, including access to unpublished technical literature.

And third, Japan should bear a greater responsibility for adding to the world's fund of scientific knowledge by funding more basic research projects.

Let me suggest some specific steps that could be taken to achieve these goals. One of the most important and critical needs is the vast expansion in technological cooperation embracing a wide range of science and engineering.

And although in recent years the number of cooperative projects has increased, the potential is far beyond the present level of activity, especially in large-scale cooperation in research.

For example, in the field of high energy physics, cooperation in the proposed superconducting supercollider would be of great benefit to both countries. In fact, other countries should also participate.

Japan should open up its government-supported R&D projects to American participants. Japanese researchers now have relatively easy access to the U.S. national laboratories.

We should expect, indeed demand, equity or reciprocal access opportunities as a pre-condition for providing access to U.S. government-funded research.

Increasing the number of U.S. scientists and engineers living in Japan is an obvious way to increase the flow of technology to the United States.

Cultural, linguistic, and other barriers make it difficult for the United States to counterbalance the estimated 7,000 Japanese graduate students and post-doctoral fellows now studying science and engineering in the United States, compared with slightly more than 1,000 Americans engaged in similar studies in Japan.

Because there is no practical way in the near future to achieve an appropriate relationship between the numbers of foreign graduate students and post-doctoral fellows in our two countries, the Japanese government should subsidize any U.S. university where Japanese nationals are studying, in order to defray an appropriate share of the cost of the programs, including teaching assistantships and laboratory facilities.

The net additional income to U.S. universities would be substantial, and would reduce the amount of the U.S. taxpayer support that subsidizes teaching assistantships and research activities.

Such subsidies would be very helpful in keeping U.S. university research facilities up to date and filling junior faculty positions.

In the long run, of course, Japan must develop the institutions and resources that will permit it to share with other nations in the costs as well as the benefits of technology.

And during the transition, Japan should assume its fair share of responsibility for the generation of new knowledge. One way would be for it to provide an appropriate level of funding for basic research to be administered by the U.S. National Science Foundation.

Japan should grant rights to U.S. firms for technologies developed in Japan, using the results of U.S. technology. Accomplishing this will require modification of the policies of the Japan Fair Trade Commission.

Another very important action involves U.S. small business, which is a major source of innovation for both the United States and Japan.

Hence, it would be beneficial to both countries, as well as a meaningful step towards a more balanced technology flow, if a large-scale program were established to transfer Japanese technology to the United States through joint ventures with small U.S. firms and entrepeneurs in the United States.

And the last area for cooperation which I will mention relates to measuring technology flows. A means of doing this is sorely needed. Japan currently has the best statistics on technology flows. However, much more data is needed.

Developing a system to measure flow will be difficult, since it is not possible to measure it with precision. But it can be approximated well enough to determine whether equity is being approached, and to provide general perspective for government policy-makers and corporate managers alike.

Let me conclude by simply noting that it is essential to move as rapidly as possible to achieve equitable technology flows. As that goal is reached, certainly the people of Japan and the United States can realize substantial and enduring mutual benefits. Thank you, Mr. Chairman.

Senator ROCKEFELLER. Thank you, Mr. Norris. Let me ask a couple of questions.

The Science and Technology Agreement covers only government-related research. It obviously does not cover private business or various private business transactions, as between the two countries.

You have said a great deal of technology is exchanged between companies through technology licenses, joint ventures, and similar arrangements.

The question I have is, can it not be said that it is true that in past years some American companies, in fact, sold technology licenses to Japanese firms for a very low price, in effect thereby creating their own competition?

To what extent has that been true? And was that done, if it was done at all, because of capital problems?

Mr. NORRIS. Well, it is true, in retrospect. However, and I was at Control Data at those times, and the company was trying to establish itself in the Japanese market.

And you have to remember, that you were not just dealing with a Japanese company, you were dealing with the Japanese company and the government. And there was very severe restrictions on what the Japanese company could do.

For example, the grant-back is one of the serious limitations in dealing fairly in negotiating a license agreement, because normally, when you license technology, you get the rights to further improvements. And it is an ongoing relationship.

Well, that was not possible in Japan. And if you did not want to accept that, you did not make a deal. So, companies, in their desire to participate in the Japanese market, did it in the only way that was available to them.

And in retrospect, they probably regretted it, to some extent. But then hindsight is always better. But now is the time to correct that.

Senator ROCKEFELLER. Well, following on that, to what extent, if any, have government regulations or whatever in Japan caused American subsidiaries doing business there to share technical data as the quid pro quo of getting the license?

Mr. NORRIS. Well, that is also part of it. And again, as I said, you were not dealing just with the company, you were dealing with the company and the government.

And unless you were willing to share your data, and provide licenses you also could not make a deal.

Senator ROCKEFELLER. Did that happen in the case of Control Data at all?

Mr. NORRIS. Yes. We had great difficulty getting into Japan starting in 1965. We saw an opportunity in data services, but the market was closed. These were restrictions on a foreign company transmitting data in the country but we were told that that would change. After four years it did change, but by that time we had lost a substantial amount of money.

Since then, we have gotten into the market through a joint venture.

Senator ROCKEFELLER. You have referred to the need for basic research. The difference between basic research and applied research, I guess, is understood.

The Japanese currently put about 3 percent of their research and development into basic research. We put about 12.5 percent, if I am correct on that.

Then in talking about basic research, you referred to advanced materials and, I believe, fiber optics in your testimony.

Now, Japan has this new Japan Key Technology Center which is pursuing 25 new long-term, I would guess, basic research projects, including advanced materials, biotechnology and fiber optics.

In your judgment are these efforts research to which we ought to have access?

Mr. NORRIS. Yes. My understanding is, however, in order to participate you have to have a laboratory in Japan. You have to have a branch in Japan that cooperates with that organization. The research has to take place in Japan, and that is a severe limitation. For example, Control Data cannot participate because we do not have a laboratory there. We have no scientists in Japan.

These are very, very important fields to us, particularly ceramics.

Senator ROCKEFELLER. But others who are doing business there and who do have——

Mr. NORRIS. They have a laboratory, yes.

Senator ROCKEFELLER. They should be able to, in your judgment?

Mr. NORRIS. Yes, and I think there are cases where there is some participation. That is progress, but still, in the overall scheme of things, compared to the access that we provide the Japanese, it is very, very small, a very small step. For example, Japanese trading companies are scouring the countryside here for technological possibilities with small companies, and we do not have that opportunity there.

Senator ROCKEFELLER. One final question, and then I guess we have to go vote and then come back.

Our government has given to the Japanese government a proposed draft. I am not sure it has been met with a great deal of enthusiasm; nevertheless, negotiations are ongoing or will be very shortly.

Do you consider that government accord basic to the goals that you want to see, which is more reciprocity between the two countries?

Mr. NORRIS. Certainly, it is a necessary, basic step to set the environment, and I hope that a good job is done in negotiating the renewal of the agreement.

Senator ROCKEFELLER. Did you see in the course of your own business experience movement made on the part of the Japanese or any others? After all, we are not just talking about the Japanese, but in general. We have reciprocity problems with a lot of other countries as well.

Did you see progress made in reciprocity as a result of private initiative on your own part or the part of other business companies, or was a government umbrella agreement or a government backing usually pretty helpful?

Mr. NORRIS. Well, both are essential.

Senator ROCKEFELLER. Could you have done it privately without government efforts?

Mr. NORRIS. No, I do not believe that private companies by themselves can get an equitable flow of technology back and forth between the United States and Japan.

Senator ROCKEFELLER. IBM cannot do that? Control Data cannot do that? Why not?

Mr. NORRIS. First of all, I mentioned the grant-back agreement. By law, companies over there cannot offer it to the United States. That, in itself, is a tremendous handicap. So unless the government of Japan takes some action, that is not going to happen. The only way the government of Japan is going to take that action is if the government of the United States insists on it.

Senator ROCKEFELLER. Senator Adams.

Senator ADAMS. Thank you. Mr. Chairman.

I have, in my relationships with Japan over the years, and I think you have, reaffirmed that and come to the conclusion that they have a real lack of basic research but have a tremendous advantage over us on the application of developed research, particularly to merchandise products.

Do you agree with that conclusion?

Mr. NORRIS. I agree with it, yes. The amount of basic research is very, very meager. They are focusing much more heavily on applied. Because of their system and their practices, right at the present time they are doing a better job in that area than we are in applied.

Senator ADAMS. I have really just one question.

You have indicated in your statement on page 6, having described the difficulties, and I agree with you both, a culture which is a matter of language and a matter of marketing in Japan as compared to the United States. They market here to a very great degree.

Do you think that we could require, in addition to what Senator Rockefeller has mentioned in this agreement, which position I do support, that the largest basic research project in the world at the present time, the Superconducter Supercollider, might be a basis for Japanese participation to a significant degree?

I do not know where we are going to get the money to fund that. It is on the cutting edge of basic research and is something that could be handled on a government-to-government level because our government will basically do it. This is a request for quid pro quo that we could easily and quickly make.

Do you think that is what we should be doing?

Mr. NORRIS. Yes, sir. I think that would be a very, very positive, fruitful step.

Senator ADAMS. Thank you, Mr. Chairman.

Senator ROCKEFELLER. Thank you, Senator Adams.

Thank you very much, Mr. Norris. I know you have a plane to catch.

Bruce Smart, who is Under Secretary of Commerce, will be our next witness. We will also have Dr. William Graham and Hon.John Negroponte, one from the White House, the other the Secretary of State's Office.

If the three of you gentlemen would be ready to testify when we come back. We will start our testimony and questions with Bruce Smart.

We are in recess for about eight minutes while I go to vote.

[Brief recess.]

Senator ROCKEFELLER. If Secretary Smart; and Dr. William Graham, White House Science Advisor and Director of Office of Science and Technology Policy; and John Negroponte, Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs would come forward.

Mr. Secretary, we are delighted to have you. We welcome your comments.

STATEMENT OF HON. BRUCE SMART, ACTING SECRETARY OF COMMERCE AND UNDER SECRETARY OF COMMERCE FOR INTERNATIONAL TRADE, DEPARTMENT OF COMMERCE

Mr. SMART. Mr. Chairman, thank you for the opportunity to testify on this very important matter of the Science and Technology Agreement with Japan.

I think it is necessary to start by recognizing that in 1945 and for some years thereafter, Japan, because of war damage, was at a tremendous disadvantage. It was certainly in the United States' interest to establish, let us say, favorable-to-Japan policies in trade and many other areas to enable that country to recover from its situation, which indeed it has done in superb fashion, clearly now becoming the second economic power in the free world, an important ally of ours, and also a fierce competitor in many world markets.

Underlying that competitive strength is a legendary skill on the part of the Japanese in applying scientific knowledge to economic advantage.

While the United States undoubtedly remains the world leader in the development of new scientific information, a lot of that information has been applied first by the Japanese, and they have probably reaped more fruits of it than we have, certainly more then they have contributed in the development of basic information which only now is starting to achieve world class status.

One of the shortcomings of the United States' system at the same time, which certainly needs to be corrected if our competitiveness is to be as full as we would like it, is to become more skilled and more quick in bringing new basic knowledge to the marketplace and to take advantage of what we have developed before our competitors beat us to the punch.

There are many factors which will contribute to this effort. One of them will be the effectiveness of our policies in governing mutual efforts in research and in scientific exchanges with Japan and with other countries. It is in that context that we think the S&T arrangement needs to be re-evaluated and to make certain that it is mutually beneficial to both parties.

It is important that we get approximately as much out of any treaty as we give. It is for this reason that the Department of Commerce has been concerned that the existing agreement has in some way not recognized the differences in the way that the two societies operate in developing and applying scientific research.

We believe, therefore, that there is need to make some adjustments. We do not want the condition to persist in which Japanese researchers have more access to U.S. projects and facilities than our people have to theirs. Secretary Baldrige asked in March that this be reviewed when the S&T agreement was up for renewal so that we could have an agreement that was, in effect, a two-way street.

In all of this, we should not overlook the fact that developing knowledge and spreading it to other countries on a mutually agreeable basis benefits both countries. It is only when an imbalance in that process exists that one or the other country is disadvantaged. It is clearly an objective which is consistent with the administration's interest in free trade.

It is important, though, that, in addition to mutual benefits of approximately equal proportions, any agreement respect the rights of the generators of that knowledge through proper protection of intellectual property rights, fair compensation for basic research that is used, and a recognition of any military security implications that exchange of information many have.

The Economic Policy Council has addressed this issue and has come up with a series of principles that should be recognized in any agreement, and those principles are being used to guide our negotiators. If it is of interest, I suspect that one of the other members of this group will describe them, but I can if you would wish.

There are, as Mr. Norris said, inadequacies in what has been happening under the present agreement. He repeated a number of imbalances. I could add some. Fifteen thousand Japanese scientists and engineers came to the United States in 1983. Only 2,600 American scientists and engineers went to Japan.

In 1985, there were over 13,000 Japanese students at U.S. institutions, most of them in technical fields. There were fewer than 800 American students in Japan, most of them in the humanities.

Major U.S. universities such as MIT host large numbers of Japanese visitors and have 50 Japanese companies in their industrial liaison program. We have very few comparatively in Japan.

It is also true, as Mr. Norris pointed out, that the government of Japan has in recent years begun to take some recognition of this imbalance and to open its research establishment to foreign scientists, including Americans. We welcome those steps.

We also believe that they suggest that the Japanese are ready to sit down and negotiate a new agreement that will perhaps better address the conditions that now exist, and that gives us hope that our negotiators will be successful in the enterprise that they start this weekend.

We appreciate your interest in the subject and will be glad to answer any questions you may have.

Senator ROCKEFELLER. Thank you, Mr. Secretary.

Not to ask an overly obvious question, but we have had more trade imbalance difficulties, not just with this one particular country but also throughout the world. It probably ought to be made fairly clear for the

record from the Department of Commerce's point of view the relationship between this agreement in science and technology and its potential impact on trade and our capacity to carry on progressive trade.

Mr. SMART. I think the agreement, Senator, to the extent that it gives us access to Japanese technology and helps us to translate that to economic advantage, will clearly help the United States in its competitive position in the world, in the prices it can get for its goods, in its market share, and in its continued technological and economic preeminence.

I am not as certain as some that it will have a major effect on the trade deficit which, my own feeling has as its roots the macro-economic policies of this country and Japan and other countries more than it has the basic competitiveness of individual nations.

After all, there are countries with trade surpluses, and I think of Brazil, which are not particularly preeminent technologically. So I am not convinced that this directly speaks to the trade deficit in dollars. It speaks very directly to our standard of living in the future, our ability to defend ourselves in the future, and our ability to remain at the top of the heap technologically.

Senator ROCKEFELLER. Mr. Secretary, it has been pointed out by several people, including yourself, that there has been improvement, in terms of gradually opening universities and labs in Japan.

It has also been pointed out, at least by me, that the first agreement, which in fact if you read it, is of the most general nature. Really, it is more diplomatic language than it is any kind of an agreement.

Nevertheless, things have been opening up a bit in Japan. Why is it that this agreement so crucial to what you want to see achieved in the science and technology exchange area?

Mr. SMART. I have not charted any graph in which one axis is time and the other axis is access to technology, but my guess is that if you did so, it would be many years before we have access to Japanese technology that approximates their access to ours. I think it is important that we have an agreement that addresses this access question more quickly than that.

Senator ROCKEFELLER. The National Science Foundation from time to time surveys Japanese companies on their research plans, but we do not evidently have a very complete list of which Japanese research laboratories are open to Americans and which are not. Nor do we have data on the size of each country's research investments in the other country.

I do not know whether the Department of Commerce has the authority to collect this kind of information, and I am asking if it does. If it does, should you be able to get those kinds of statistics when you, for example, are collecting trade information?

Mr. SMART. They would be interesting statistics, and there may be ways of getting at the problem without an exhaustive hundred percent survey of individual companies. I will take a look at that and report back to the committee with any suggestions that we might have that answer the question.

Senator ROCKEFELLER. Mr. Secretary, you stress balance and you stress equivalence. You agree, I take it, with the proposition that Japan is now an economic superpower and has to have a more balanced relationship based upon mutual advantage, if I could just float that softball towards you.

Mr. SMART. I accept both the softball and the conclusions that are implicit in your statement. I am not certain what the question was.

Senator ROCKEFELLER. I wanted to know if you would like to elaborate on that at all.

Mr. SMART. Only that I believe there are signs that Japan is starting to consider itself a world power not only with the advantages but with the responsibilities that go with that status, but it is historically counter to many, many generations of tradition in which they have been insular and very self-centered, and I think this new idea is having some trouble moving forward rapidly within the Japanese society.

I believe an agreement like this might help it to move forward. There are certainly Japanese who already think in responsible world terms, but there are many others who resist changing a system that currently has given them great advantage in world marketplaces.

Senator ROCKEFELLER. Do you think we also in this country also have our own share of responsibilty to be more aggressive in terms of learning the Japanese language, deciding to go to Japan, corporations pushing their young people coming up to get skillful not only in linguistic arts but business nuances in relation to Japan?

Are we not preaching a bit here about what the Japanese should do and yet not really pushing ourselves hard enough?

Mr. SMART. I think most of our people now in the work force have grown up in an environment of post-World War II in which the United States had tremendous unsustainable advantages in world commerce and was able to be very successful without working as hard or being as dedicated to it as perhaps was necessary in the 1930s or back in the 19th Century.

The Japanese did not have that luxury, and it is like a team that is hungry looking for its first Super Bowl as opposed to one that is defending the championship for the fourth time.

There is a need for Americans, generally speaking, to rediscover the work ethic. In my opinion, that process started when we got over the problems of the Vietnam War and started looking ahead.

I have been very encouraged in the last five years at the aggressiveness of American business. I might add I was delighted to find similar aggressiveness in the United States Government when I came down here two and a half years ago.

I think large numbers of Americans want to retain the preeminence and are willing to work very hard to do it. I think we do need to give them an environment in which it is possible, and included in that environment is the expectation that others will give us the same advantages as they have enjoyed for many years while they were recovering from war or for other reasons.

Senator ROCKEFELLER. Mr. Secretary, are you reasonably optimistic that these negotiations will reach a satisfactory conclusion; that we will have a new Science and Tech Agreement which is equivalent to our needs?

Mr. SMART. Senator, first of all, the negotiations have really not begun, and so it is very hard to predict the outcome. I have confidence in the negotiators. I have confidence in the framework within which they are operating.

I believe it is in the interest of both Japan and the United States that we have a successful treaty, and in that sense I think the climate is good for an agreement, but I certainly do not think that you should assume anything until the game is played.

We will have to negotiate firmly and vigorously in order to get an agreement that is proper for us. We are dealing with very skilled negotiators on the other side.

Senator ROCKEFELLER. Mr. Secretary, I thank you very much for your courtesy in coming before the committee. Your testimony, as always, is very helpful, Mr. Smart.

Mr. SMART. Thank you, Mr. Chairman. I am certain that those who follow me will be able to help you further, and I think you will find that we share common objectives and a common determination to achieve them.

Senator ROCKEFELLER. Thank you very much.

Dr. William Graham, as I indicated, is the White House Science Advisor and Director of the Office of Science and Technology Policy. He has been very much involved with these matters for a long time.

Dr. Graham, I am delighted that you are here, sir, and look forward to what you might have to say.

STATEMENT OF DR. WILLIAM R. GRAHAM, WHITE HOUSE SCIENCE ADVISOR AND DIRECTOR, OFFICE OF SCIENCE AND TECHNOLOGY POLICY, EXECUTIVE OFFICE OF THE PRESIDENT

Dr. GRAHAM. Thank you very much, Mr. Chairman. In response to your invitation, I would like to outline today the fundamental policy and rationale that this administration is pursuing to advance our scentific and technological cooperation with Japan.

I would also like to thank you and your committee for conducting a confirmation hearing of Dr. Thomas Rona, currently the assistant director of my office, OSTP, for the position of associate director, which will be that of my assistant, and I appreciate your moving forward on that. I think you will find Dr. Rona an excellent candidate for this position.

Senator ROCKEFELLER. We will have that hearing this afternoon.

Dr. GRAHAM. Thank you very much.

Our bilateral science and technology cooperation with Japan has been both active and extensive, as a list that I will submit for the record of agreements and understandings will attest.

The U.S.-Japan presidential science and technology agreement signed by President Carter and Prime Minister Ohira went into force on May 1, 1981. This umbrella agreement has since been extended twice. It is currently due to expire at the end of this month.

This presidential level agreement offers both a somewhat unique and certainly an appropriate vehicle for a coordinated policy framework to govern our science and technology cooperation with Japan. The agreement should certainly be consistent with each country's current science and technology capabilities and should foster sustained cooperation in the years to come.

Underlying this agreement itself is an even more fundamental framework for international science and technology cooperation that this Administration pursues, and I would like to outline the principal elements of that briefly if I might, so that I can set the U.S.-Japan cooperation in perspective.

The basic framework addresses the shared and balanced responsibilities and contributions of the nations of the world to our common fund of knowledge in basic science. It addresses open research laboratories and programs in basic science, open dissemination of basic research results in science, provision for the education and training of current and future generations of researchers, protection of intellectual properties where they occur in basic science, and certainly careful review and control of technology in some cases associated with basic science, technology that plays a major role in the national security of the U.S. and our allies.

Now, within that framework, most basic framework, I would like to present the overall U.S. objectives in science and technology cooperation with Japan, and also describe what we see as imbalances in the current bilateral S&T relationship. Then I will highlight the differences between our two countries' systems which may contribute to that imbalance. And finally, I will summarize the guiding principles that the U.S. would like to see embodied in the renewal of the U.S.-Japan presidential level S&T agreement.

The overall objective in keeping with the framework I described in international science and technology cooperation is the reciprocity and equitable distribution of responsibility and benefits. These principles are reflected, as you mentioned, in the Technology Transfer Act of 1986, and the President has articulated this policy in his competitiveness initiative and in Executive Order 12591 on facilitating access to science and technology.

Renewal of the U.S.-Japan presidential S&T agreement gives us the opportunity to review our relationship with Japan and to use the framework for cooperation in a way that is appropriate to the economic and scientific knowledge and capabilities of both sides and will serve both countries' long term interests.

Balance and reciprocity is the crucial element in establishing a strong foundation for our overall relations with Japan, both now and for many years to come. Let me describe the current balance and benefits of the situation today.

While the U.S.-Japanese science and technology cooperation has been mutually beneficial, it has not been balanced in terms of contributions, and costs, for historical reasons. Benefits for the U.S. have been chiefly to our basic research efforts—I'm sorry.

Benefits for the U.S. have been chiefly to our basic research efforts in universities and government-funded institutions, where Japanese graduate students and visiting scientists have provided in this country a supply of well-trained, disciplined manpower to carry out our research programs.

Benefits to Japan have to date been more directly in economic returns, as Japanese scientists and engineers have used the advanced training they received in the U.S. to exploit the commercial technological potential of research findings published in the world literature.

And perhaps anticipating one of your questions, and in response to one you presented earlier to Secretary Smart, I would say that the Japanese have been very aggressive in this regard and the U.S. industry has become accustomed to not being so aggressive.

The U.S. industry will have to change its approach to advanced technology, or it will find itself at a long term disadvantage to the Japanese. And I compliment them for their work in that area and encourage the U.S. industry to move out much more strongly.

In most government-sponsored cooperation with Japan, for example, the ratio of visiting Japanese to visiting Americans over the last several years has been around five to one. That represents an imbalance to me that both sides need to address.

Furthermore, in 1986 there were over 300 Japanese researchers at the National Institutes of Health, supported entirely by the U.S. government on three-year fellowships. There were additional Japanese and other foreign researchers there under other sources of funding.

These people make substantial contributions to our research base, and we think we can make such contributions to the research base in Japan and other countries, and we would look forward to a similar reciprocal cooperative agreement in a manner that is stronger than it is now.

In fact, the director of the NIH has said that a large percentage of the Japanese NIH fellows and visitors are from industrial, not academic, research environments in Japan. In that same year 1986, only 100 American researchers participated in short term visits and official U.S.-Japanese research programs in their totality.

We are encouraged that Japanese officials are sensitive to concerns that have been raised in both the U.S. and Europe about the restrictions on foreign participation in the Japanese R&D system and the importance of increasing Japan's contribution to the world pool of basic scientific knowledge.

Recent official government of Japan policy statements certain espouse increased support for basic research and efforts to increase international cooperation in science and technology. An example is in the Human Frontiers international research program, which Prime Minister Nakasone raised at the Venice summit.

The impetus behind this initiative is to be applauded. In the U.S., the current imbalance in our science and technology relationship with Japan gains heightened urgency and visibility in the context of the imbalance of our trade relationship and the widespread public sympathy for protectionist measures.

The Japanese are certainly aware of this concern. Now let me address differences between the U.S. and Japanese S&T systems. There are clear differences between the two countries in purpose, organization, and structure of the science and technology enterprise.

For example, in most cases Japanese visitors to the U.S. have access to basic and applied work being done in the forefront areas because our research is done in universities and national laboratories to a large degree, and those laboratories are generally open to visitors and visiting scholars and researchers.

This is in my view as it should be, and it is consistent with the international framework I described. In Japan, advanced strategic research, however, is often performed in closed proprietary settings, much like corporate research in the U.S., and it is not frequently open to foreign visitors.

The U.S. and Japan spend roughly comparable amounts on research and development as a percentage of gross national product, 12.1 percxent for the U.S., 12.9 for Japan. However, in the U.S. 47 percent of the total R&D expenditures are provided from government sources, while in Japan the government provides only 22 percent of national R&D funds.

Most U.S. government-supported research that is not classified is published in the open literature, and in many cases foreigners as well as U.S. citizens are eligible to participate in the projects.

The U.S. system is so open, in fact, that this is the first year—this year for the first time we as a nation will be collecting data on the extent of foreign participation in our universities and our national laboratories.

In Japan, industry is a prime supporter of research and development, providing more than 67 percent of the total national expenditures. By its nature, such research emphasizes applied and developmental activities conducted primarily in a proprietary setting.

Moreover, both the Japanese government and industry are able to devote a greater share of overall national resources to civilian R&D directed at commercial interests, since Japan, unlike the U.S. and Europe, does not conduct R&D to support the security needs of the western alliance.

For the guiding principles for U.S.-Japan cooperation, we have conducted a review in the Economic Policy Council, which is a cabinet level group that reports to the President. In reviewing these principles, the U.S. has determined that we seek balance and reciprocity in our bilateral scientific interchange in terms of access and opportunities for research and training and for information for nationals for each side and in contributions to the generation and dissemination of new knowledge to the world S&T enterprise.

These principles could manifest themselves in a number of different areas, including support for basic and applied research and facilities open to foreign participation, dissemination of science and technology information in the world literature, training of the next generation of scientists and engineers, protection of intellectual property as an incentive for continuing the process of discovery, and cost sharing of large scale international R&D projects.

We seek increased access to both applied and basic research, recognizing that Japan's strengths lie in the applied area today, which, being largely industrially funded, have not been emphasized in government-sponsored exchanges to date.

We are hopeful that the Japanese government will act aggressively to find ways to increase the opportunity for access by U.S. scientists and engineers.

With regard to intellectual property rights, the renewal of this agreement presents a first opportunity since the President signed Executive Order 12591 to integrate this issue into the overall negotiations of a bilateral agreement.

And we also look to other areas, such as the 1956 patent secrecy agreement, recently reaffirmed in the bilateral agreement on SDI research, should any areas of discovery occur which have potential classification requirements.

As regards the management of cooperation, we are proposing a three-part management mechanism, a joint government ministerial level review committee to coordinate policy for the overall bilateral S&T relationship and assess progress towards achieving balance and reciprocity, a joint inter-agency executive committee within the U.S. government to ensure that policy consistency and implementation of this agreement and to oversee technical level working groups in the proprietary areas, and finally a joint high-level advisory panel representing a cross-section of the scientific community of both countries, to advise the two governments on proprietary S&T issues.

And now I will conclude with a short statement on the current status of our own work in this area, if I may. We are entering the phase of intensive negotiations this Saturday on the specific terms of the renewal. I led a delegation to Tokyo in February of this year to set the policy framework for the renewal of this agreement, and I am pleased to say that Ambassador Negroponte, sitting at my left, was a vigorous participant in that delegation.

In late August the U.S. transmitted a diplomatic note with annexes to Japan, proposing that these annexes be added to the agreement and that it be renewed for five years beginning November 1, 1987.

At Japan's invitation, the U.S. delegation visited Tokyo on October 2nd and 3rd to brief the key technical agencies on the U.S. proposal. A Japanese negotiating team will meet with the U.S. negotiators in Washington this Saturday and the following Monday, October 19th.

In conclusion, let me say that Japan is one of our most important allies. I believe that we have much to offer each other in science and technology. Thus, we have every hope that a new agreement satisfactory to both countries will be concluded in the near future.

Thank you very much, Mr. Chairman, and I would be happy to respond to your questions.

Senator ROCKEFELLER. Thank you, Dr. Graham.

You put a great deal of emphasis on basic research, and the need for the Japanese to do more basic research. It has been previously explained and would obviously be evident that the Japanese have specialized more in applied research, because there was a national effort over the last generation or so, to pull themselves ahead and become competitive, which of course they have done.

In the meantime, it is generally agreed that our basic research is very good and our university research R&D is of unparallelled quality. Now, you want to see more of that shared responsibility for doing basic research.

Why is it not—if there was a system of reciprocity developed, why would it not be possible to keep on with the current equation, so to speak, of us concentrating on basic research, them concentrating on applied research, and both of us exchanging whatever it was that we found out? Why is that wrong?

I am not advocating that. I am trying to challenge your thinking.

Dr. GRAHAM. Mr. Chairman, I think we should take advantage of our strength in basic research and the Japanese strength in applied research, and certainly use that as two of the components for the reciprocity in our agreement. At the same time, I believe that all countries which depend as heavily upon advanced science and technology as does the U.S. and Japan should be strong in both basic and applied research.

And I think it will lead to a better long-term balance, both in our own scientific capabilities and in our international relations, if on our part we strengthen our applied research, which is already quite good, but certainly needs to be a subject of continuing effort in the U.S., and emphasize the need for the Japanese as major industrial partners in the world and as a very strong technological society to continue to strengthen their own basic research capabilities and to contribute that basic research to the worldwide fund of information.

I do not think in the long run it will be possible to maintain balanced and equitable relations if both countries do not have substantial capabilities in both the areas of basic and applied research.

Senator ROCKEFELLER. Do you think there should be kind of a Fulbright arrangement, wherein the Japanese government or whatever institutions pay for Americans to study in Japan, learn their language, just as the Fulbright—actually Fulbright is reciprocity, is it not? That brings them both ways.

What do you think we should be doing in that area?

Dr. GRAHAM. I think the Fulbright arrangement, the Fulbright scholars, was a valuable and an innovative idea. And I think we need more valuable and innovative ideas in our international exchange and cooperation.

I would not want to preempt our negotiatorsor limit the initiatives that the Japanese may wish to suggest in these discussions. But I think we certainly need to strive to encourage and increase the transfer of

people in both directions, with the greatest need today being the transfer of U.S. researchers into the Japanese research environment to participate in that and to be able to contribute in that environment.

Senator ROCKEFELLER. As I indicated in my opening statement, there is in fact a law on the books now which makes it more than possible for an American Federal laboratory director to deny access to anybody from overseas who wishes to do research there or have access to our research there if there is not reciprocity.

Now, that is a law on the American books, passed last year in the Congress. Do you know if it is being implemented? And if it is not, why should we have to negotiate for reciprocity if we have a legal requirement for it in terms of access to our own research?

Dr. GRAHAM. Well, Mr. Chairman, of course we support the principle behind that and the law itself, and the President re-emphasized that in E.O. 12591 in the section on international science and technology.

We would like to see the substance of that law as an integral part of this presidential level basic science and technology agreement with the Japanese. Our aspiration is not to limit the Japanese access to our research enterprise, but to open our access to their research enterprise, which in fact would give this balanced and reciprocal character which we believe is of the greatest benefit to both countries. And that is what we are striving to do in our discussion with the Japanese.

Senator ROCKEFELLER. Before I call on Ambassador Negroponte, do you have basically an optimistic feeling about these upcoming negotiations starting on this Saturday? Are you worried or what?

Dr. GRAHAM. I share Secretary Smart's sentiments on that matter. I believe that there is much to be gained by both countries having a strong, balanced, and reciprocal cooperative agreement and cooperation in science and technology.

And so I think the fundamental principles that we are pursuing are both correct and in both countries' interests. I believe that the Japanese are skillful and careful negotiators, and I think we are particularly fortunate to have Ambassador Negroponte as our primary negotiator in the U.S. to be putting forward our position and carrying out these negotiations on our behalf.

And with that, I have both aspiration and optimism for the outcome.

Senator ROCKEFELLER. Dr. Graham, I thank you, sir, and I apologize for needing to move on to Ambassador Negroponte. But we have a vote problem, and I am very anxious to hear what you have to say, sir, since you will be carrying on these negotiations.

STATEMENT OF JOHN D. NEGROPONTE, ASSISTANT SECRETARY OF STATE, OCEANS AND INTERNATIONAL ENVIRONMENTAL AND SCIENTIFIC AFFAIRS, DEPARTMENT OF STATE

Mr. NEGROPONTE. Thank you, Mr. Chairman. I think in the interest of time I will dispense with any prepared remarks, but I would like to say that I welcome the opportunity to discuss this issue with your committee.

By statute, the Secretary of State has primary responsibility for coordination and oversight with respect to all major science or science and technology agreements and activities between the United States and foreign countries, an authority which has been delegated to me within the State Department. So in that capacity, I am especially pleased to be with you today.

I think I would like to focus my remarks on two areas, Mr. Chairman. First, our science and technology relationship with Japan generally. I think it is fair to say that in the government to government sector at least the relationship is intricate and complex, and the agreement that we have under discussion at the moment is not the only one that is outstanding.

And I have here a list—and I know it is available to the committee—of 19 different agreements and memoranda of understanding dealing with various aspects of scientific cooperation with Japan, ranging all the way from atomic energy, an agreement between our Department of Energy and MITI, to such questions as good laboratory practices by the Food and Drug Administration and its counterpart in Japan.

So there is a tremendous complexity in our relationship, and I do not think that these 19 government departments and agencies would have entered into these arrangements with Japan if they did not see some mutuality of benefit in entering into such.

After all, they have to spend their own valuable research dollars in order to have these relationships.

And that brings me to one point, my final one with respect to our S&T relationship generally with Japan, and that is this question of the researchers at the National Institutes of Health. And since that example has been cited so frequently, I do feel compelled to point out that there are approximately 330 Japanese researchers at the National Institutes of Health. About 260 of them are post-doctoral fellows and come under the category of visiting fellows. The balance, about 50, are more senior researchers and come under the title of either visiting associate or visiting scientists.

But these positions are temporary, non-tenure positions and are from one to three years in duration. The important point is that they are filled by competition that is open to American and foreign scientists equally, and that of the 2,000 post-doctoral positions, half are filled by foreigners and the balance by Americans.

The post-doctoral positions are paid at about $20,000 per annum. Americans who obtain these positions can be paid as much as $25,000 per annum. And any person who fills these positions is required to sign an employee agreement in which any employee invention becomes the property of the National Institutes of Health.

So I cite this, Mr. Chairman, just to point out the complexity of this relationship and the fact that I do not think in this particular instance that the benefit all flows in one direction.

I understand from the NIH that there is a great deal of satisfaction with this arrangement on the part of the National Institutes of Health.

As far as the agreement that we are renegotiating at this time is concerned, I think Dr. Graham and Secretary Smart have described our purposes and objectives in considerable detail. The only additional point that I would like to make at this hearing is to read for you the principles that will be guiding——

Senator ROCKEFELLER. Mr. Ambassador, could I ask your forebearance, sir? I have to go to the floor in two minutes to make a vote, but I am coming right back. So if you will just excuse me for a moment.

[Recess.]

Senator ROCKEFELLER. Mr. Ambassador, I cut you off.

Mr. NEGROPONTE. Just to recapitulate, my first point, Mr. Chairman, was simply to point out that the S&T relationship is complex, intricate, and involves a lot of different agencies and interests. This is not to say that there are not imbalances and that more should not be done to increase the balance and reciprocity in the relationship. I would fully endorse that proposition, and that is of course what we are seeking to do here.

My other point would simply be to read for you—it is rather brief—the principals that are guiding our approach to the renegotiation of the framework U.S. science and technology agreement, and which we have all agreed within the executive branch ought to be the foundation of the U.S. science and technology relationship with Japan.

The first is that a balanced and fair S&T relationship requires equitable responsibilities and reciprocal opportunities for participation in each other's S&T enterprise.

The second is that the United States and Japan share responsibilities for:

First, generating new knowledge and technologies to fuel prosperity and security needs of the western alliance;

Second, maintaining an open basic research environment and disseminating scientific and technical information;

Third, supporting open academic basic and applied research;

And fourth, nurturing the next generation of scientists and engineers.

The third principle is that our two countries share a responsibility for the adequate protection of intellectual property rights and the disposition of patents and copyrights, trade, secrets and know-how arising from collaborative activities.

Fourth, the U.S. and Japan share responsibility for protecting the national security interests of the Western Alliance by providing for the adequate protection of dual use technologies and classified and unclassified research activities and results subject to the export control regime.

And lastly, our two countries share responsibilities for sponsoring and financing large scale research and development projects that address problems at the frontiers of knowledge. When the U.S. and Japan agree to collaborate in such projects they should share costs in proportion to their risks, benefit, and management shares.

With that statement of principles, perhaps I will conclude my remarks by saying, Mr. Chairman, that the negotiation we are embarked upon is designed precisely to seek to promote the principles that I have just elaborated.

I think it is too early to say what success we will have, but I think that certainly the renegotiation of this framework science and technology agreement is a timely and appropriate vehicle for pursuing the realization of the principles that I have just discussed.

Thank you very much.

Senator ROCKEFELLER. Thank you, Mr. Ambassador.

As you are aware, the State Department from time to time, in trade matters in particular, is sometimes viewed by others as being the agency which, because of the political considerations and bilateral sensitivities with respect to many nations, is sometimes reluctant to push for the kinds of agreements in a hard-edged world which work.

And that very well may be unfair, but you and I have both heard that, and the reason for that would be that the State Department obviously has to look at a broad variety of bilateral relationships when considering the relationship on any particular subject between two countries.

Nevertheless, we are talking here about national goals and we are talking about a problem which symbolizes the potential inequalities between the willingness of two countries to share.

Now, you mentioned—you rebutted a point that was made on NIH, and you appeared to take some satisfaction doing that. My question to you is, other than those goals that you have just read at the completion of your testimony, there is a large national interest involved here, do you not think, beyond just the numerical counting of students here and students there?

I mean, the national interest in terms of the direction of the economy, the willingness of the American body politic, both Congressional and executive branched; to take a stand on something that involves an interesting concept called reciprocity is a high stakes game right now, would you not agree?

Mr. NEGROPONTE. First of all, I would certainly agree, Mr. Chairman, and secondly I think that because of the increasing importance of Japan itself as an economic, scientific, and technological power, it behooves us to seek to put that relationship on the kind of footing that we are seeking.

So I do not have any quarrel with the point that you made.

Senator ROCKEFELLER. Would you agree that reciprocity is a desirable equation in our relationship, in the bilateral relationship?

Mr. NEGROPONTE. Yes, sir.

Senator ROCKEFELLER. And that that has to be driven towards?

Mr. NEGROPONTE. Yes, I would not argue with that. Could I just——

Senator ROCKEFELLER. Of course.

Mr. NEGROPONTE. With respect to the National Institutes of Health, my point was not to rebut the argument. My point was simply to show its complexity. I think a lot of agencies enter into relationships, scien-

tific relationships, with other countries and other countries' agencies for reasons they see to be in their own interest.

So sometimes it depends on the perspective from which one is looking at that question.

Senator ROCKEFELLER. Then according to what I said earlier, the Japanese, in that they have since the end of the Second World War been building their economy, have specialized in applied research and have, at least in the judgment of this particular Senator, skillfully and understandably, but nevertheless very substantially, protected a number of industries as they have grown to world power super status; that this business of shared responsibility now is a real factor.

And this Senator would question whether or not that would come about by cultural good will, whether the Japanese out of simply the desire to see accounts squared will do so, absent government to government agreement, for example, in an agreement on science and technology.

Would you not agree with that?

Mr. NEGROPONTE. Yes, and I think that this agreement and its renegotiation provides a vehicle to enter into precisely these kinds of discussions.

Senator ROCKEFELLER. As I read over the signed agreement of 1980, it really is quite vague. I do not know what it is that makes countries adhere to agreements and what it is that is not, and how specific language has to be.

I have not seen that many treaties. This one strikes me as unusually vague and general.

Mr. NEGROPONTE. That agreement at the time had different purposes than the purposes that we are pursuing at the moment. I think there was a history to that agreement—I think if we were pursuing it today as we are, we would pursue different objectives.

I guess the best way of answering you is to say that in the elaboration of this agreement and its extension, we are now seeking a much greater level of precision than we were previously with respect to reciprocity, balance, areas of concentration.

We propose to identify various scientific areas of concentration. We have annexes with respect to intellectual property, and so forth.

So I would say that whatever vagueness might have existed then, certainly the texts that we have proposed to the Japanese would redress that deficiency.

Senator ROCKEFELLER. Mr. Ambassador, what perchance will happen if the Japanese decide not to do the necessary negotiating so that we can conclude a reasonable agreement? Does the existing agreement expire, does it go into a free-fall status, or what?

Mr. NEGROPONTE. I think that if we were to reach the point where we decided that we could not achieve a mutually satisfactory negotiated solution, the agreement would have to be allowed to lapse.

But I would point out, Mr. Chairman, that it took us almost a year to elaborate our own position, and we only submitted it to the government of Japan at the end of August of this year. And while I would not

argue—I would be the last to argue that we need an indefinite period of time to achieve our negotiating objectives, I would point out that we are at the beginning, in my view, and not the very end of this negotiating process.

Senator ROCKEFELLER. I understand that, Mr. Ambassador, and I think that you probably understand that I am just trying to emphasize the importance that many of us here in the legislative branch attach to this particular upcoming agreement.

The United States and Japan have created some 40 specific joint projects under the existing science and technology agreement. What happens to these projects if a new umbrella accord is negotiated? Do they continue as is until their scheduled expiration dates?

Mr. NEGROPONTE. If it is negotiated?

Senator ROCKEFELLER. Yes.

Mr. NEGROPONTE. Yes, I would think the answer to that would be yes.

Senator ROCKEFELLER. The note says I must go. Nobody has ever accused the Senate of being an intelligent place. It is just that we are well paid to do not very much.

I have to go vote again, and I apologize. Perhaps—Mr. Prestowitz I know is here, and you are our final witness. Mr. Ambassador, perhaps rather than keeping you, let me excuse you with my apologies for not being able to pursue this more with you.

Of course, we will see each other again. And I ask if Mr. Prestowitz would be willing to stay for a few moments. Thank you very much.

[Recess.]

Senator ROCKEFELLER. My apologies to you. I would be delighted—you know Japan well and you have worked in negotiating with them in many areas for a long time. I would be interested in your perspective.

STATEMENT OF CLYDE PRESTOWITZ, CARNEGIE ENDOWMENT

Mr. PRESTOWITZ. Well, I have just a short opening oral statement to make, Senator.

I think that the key to—well, first let me say that I think that establishing a balance in flow of technology between the United States and Japan is one of the most important things that the United States should be focusing on, not only as part of its trade policy, but as part of its overall economic and national security policies.

I think that the key objective in our efforts should be a focus on results. In many, many of the negotiations that I have been involved in—and I have heard it in testimony here today—there is discussion of equal opportunity or equal access.

And the difficulty in my experience is that "opportunity" and "access" are words that have different meanings in Japan and in the United States. So I think that in any efforts that we undertake we must focus on actual concrete results. It is possible to negotiate an agreement under which both sides undertake to provide a certain number of dollars or a certain number of people or a certain number of trips. Anything that is concrete can be negotiated.

Anything that is in principle, that is philosophical, is subject to interpretation and cannot be negotiated. And I think it is interesting, in trying to understand the difficulty in establishing a balance in flow of technology, I think this hearing that you are conducting today is really an interesting example.

In the audience today are some of the Japanese negotiators who actually will be negotiating with the American side. There are also in the audience today ex-American officials who are advising the Japanese negotiating team.

Now, I am not saying this is a wrong thing, but what I am trying to point out is that we do not have anybody sitting in Japanese hearings or ex-Japanese officials advising our negotiating team on how to negotiate a science and technology agreement.

And it just happens naturally. I mean, our system is just open and it just happens that, because of the nature of the two systems, there is access here automatically that people do not even think about, that does not exist on the other side.

And it is not a matter of being fair or unfair. It is simply a matter of two systems that are dichotomous and that tend to operate to create imbalances. So when I talk about concrete results, let us focus on a couple of examples.

There has been much discussion here today about the 330 Japanese researchers at NIH. A large number of those researchers come from actual Japanese industrial companies, and what is happening is that they are in essence being trained in the techniques of biotechnology research.

The NIH, of course, is one of the leading institutions conducting such research. And here I think we get into this great difficulty of basic and applied. By its nature, basic research is amorphous, broad, non-specific, and operates in general principles.

And what is happening is that we are training a number of Japanese industrial researchers in the general principles and techniques of biotechnology, and they are returning to Japan and applying those to specific products.

Now, not only do we not have the opportunity to send 300 researchers to an NIH in Japan, because an NIH does not exist in Japan, but even if we did we would not be getting an equitable flow because what is going to happen is that, having learned the techniques, those researchers will return to their companies in Japan and they will produce products.

Now, by its nature basic research is not patentable, it is not copyrightable, it is not protectable. But applied research is, and so once a product is developed within a company then it will be protected and there will be an economic return.

And the economic return will go to Japan and possibly not to the United States.

The great difficulty with that is that if a nation continues to invest in basic research in which it gets no return, it cannot long afford to keep investing, and so it will not. And then of course, the seed corn dries up.

So to use an example of the kind of thing I would like to see us strive for, in return for having those 300 Japanese researchers at NIH, it would be nice for us to have the opportunity to take our industrial researchers, people from companies like Monsanto or Dupont, and send them to work in the laboratories of the companies in Japan who are sending their researchers to NIH.

That would establish a more equitable balance in the flow of biotechnology research. That is just one example.

Senator ROCKEFELLER. To interrupt you, why, if it is the case, would that not now be possible to do that?

Mr. PRESTOWITZ. Well, at the moment, you know, the argument will be made that the companies in Japan are private companies and they might not want researchers from their competitors coming to Japan and operating in their labs.

Senator ROCKEFELLER. If this is a government-aided, so to speak, science and technology agreement, how could we overcome that?

Mr. PRESTOWITZ. It would require an agreement essentially on affirmative steps from Japan. In essence, what I am suggesting is something that is not very easy, because what I am suggesting is that the governments of Japan and the United States in the interest of establishing a balance in technology flow, would override to some extent the desires of private industry, particularly in Japan.

But on the other hand, as I point out, those private industry interests in Japan are sending people to NIH. So there is a quid pro quo.

One other thing I would like to mention is the question of intellectual property rights. You asked Bill Norris earlier this afternoon about American companies licensing to Japan, and he made the point that for a long time it was required in order to have joint ventures or establish businesses in Japan.

But I think that there is something which is much, much more important than that, which again it is awfully important for this kind of agreement to address.

The average time to issue a patent in the United States is about 19 months, and at the moment a very large—roughly half the patents being issued in the U.S. at the moment are going to foreigners, and the bulk of those are going to Japanese.

So Japanese companies are applying for and being issued patents very rapidly in this country. The average time in Japan for issuance of a patent is about five years. But beyond that, for really important patents the average time in Japan is much longer.

Sumitomo was found to be infringing Corning Glass' patents on optical fibers in the United States yesterday. Those patents of Corning's have still not issued in Japan. It has been nearly 15 years. And the same is true for a large number of other patents.

Beyond the time it takes for a patent to issue, there is also the procedure. That is, if you are an American company, you apply for a patent in Japan and you have Japanese competitors, it is to their advantage to oppose your patent, and so they do. And that takes a long time.

Then if ultimately the patent is issued, you have overcome all of the objections, the companies in Japan can then apply to have your patent voided, and that takes more time, the legal process.

Then by that time, if you have won that one and you want to then collect damages, you have to go to court. The Japanese court system is such that cases typically take 20 or 30 years. So as a matter of fact—in principle, Japan has protection of intellectual property, they have copyright law, they have patent law.

But as a matter of fact, to get protection in Japan as a foreign company applying for a patent in Japan, it is very difficult. And so what happens is, an industrialist knows before he even tries what he is up against, and therefore it is a logical thing for him to do to engage in a license, because he knows that the chances are he can be ripped off anyhow, so he might as well get something. And he licenses relatively quickly at a relatively low fee.

Now, again, it is not unfair. Nobody is kind of sitting there necessarily consciously trying to use it as a sanction. But the way the two systems operate, it means that a Japanese company can get protection for its intellectual property in this country in two years, whereas American companies very often can never get protection for their property in Japan.

And it is an imbalance. I do not know if it is fair or unfair, but it is an imbalance.

Senator ROCKEFELLER. And then plus the fact that, as you point out, the basic research which we specialize in is not patentable in any event.

Mr. PRESTOWITZ. That is right.

Senator ROCKEFELLER. Can I interrupt again, Mr. Prestowitz, to say that, given that barrage of difficulties in the area of intellectual property rights and given that intellectual property rights are an objective of the negotiations, then how do we pursue this? You have a pretty impenetrable situation.

Mr. PRESTOWITZ. You have to, as I said, look for it in terms of concrete results. If we have 300 researchers at NIH, that is fine. I am sure they contribute to NIH. That is why NIH has them.

But it would be nice to have 300 Americans going to Japan, participating in some of their research in Japan. And if that requires that they work in Japanese companies, then so be it. That then is 300 for 300, and that can be negotiated.

What cannot be negotiated is some kind of vague equal opportunity. I do not know what that means, but I can negotiate 300.

I would say, intellectual property, part of the reason for the long time in Japan is that the Japanese patent office is overwhelmed with patent applications. Many of them are what we would call junk patents. It is fashionable in Japan to apply for patents. Everybody applies for a patent on everything, and that tends to overload the system.

But it might be possible for the Japanese to consider expedited procedures, for example, in the case of foreign patents, particularly when their companies are getting very expeditious treatment over here, and again I could negotiate for that.

But what I cannot negotiate for is equal responsibility for protection of intellectual property, because I do not know what equal responsibility means.

Senator ROCKEFELLER. Mr. Prestowitz, what you are saying I think is terribly important, and I think what some of us are worried about is that, what so often happens in trade matters, that when trade is honestly negotiated by the State Department in all honesty it gets sublimated to larger so-called broad bilateral interest, and therefore an individual vigor toward specific goals gets downgraded.

Can you give me an example of the kind of results oriented negotiation—I believe I heard you do this once in front of the Finance Committee on trade—a results-oriented negotiation which gets away from the general language which you indicate. The so-called opportunities and access type language, which you indicate the Japanese can very easily get around, and give us one that works, a type of negotiation, a precedent, as it were, that works?

Mr. PRESTOWITZ. Well, I think there are two things that have really fascinated me in the last couple of years. The classic example of what you are talking about is airline negotiations. The United States has the world's low cost airlines, and if airline service were on a free trade basis we would carry all the world's passengers.

But we do not even ask for it to be on a free trade basis, because to be a real country you have to have an airline, and we know that airline service is a matter of national sovereignty and we are not going to get it on free trade.

And so we negotiate it reciprocally, and we give so many landing rights to JAL and so many to All-Nippon Airways, and in return we get so much for Northwest and Pan Am and so forth. And you know, that has been a kind of standard method of negotiation in airline services ever since airline service, international airline service, began.

What I think is even more fascinating is the recent negotiation on bank capital ratios. The Japanese financial regulations are not as—do not require the same level of capital ratio for banks. They require about a two and a half percent level of assets to capital ratio. Ours are about five percent.

In the last three years, Japanese banks and financial institutions have made large inroads into the American financial markets, and as they have done so—I mean, it is just incredible.

For example, in the space of two years Japanese banks have taken 60 percent of the business for letters of credit on municipal bond issues. Their cost is lower, their cost of capital.

You know, it is just like in the semiconductor business. The cost of capital in the semiconductor business is lower in Japan. So is it in the banking business.

And the fascinating thing is that, whereas when we negotiate with them on semiconductors, anybody who suggested that we should level the playing field was accused of being a protectionist, the first thing that the Treasury Department of the United States did in response to this was to run to Japan and pressure the Japanese to increase the capital ratio of their banks.

And in fact there is an agreement, and I do not think it is an adequate agreement, but the fact is that Japanese banks are increasing their capital ratios. That is a reciprocal, results-oriented, concrete agreement. That is the kind of thing we should be doing, I believe.

Senator ROCKEFELLER. In your concern about basic research, that is not an NIH or agency to agency type, is it that I will give you three people, you give me three people, type agreement? That is a change of direction.

Could the Japanese do that? Are the Japanese not doing that now simply because they have a budget deficit? Is it cultural?

Mr. PRESTOWITZ. You say basic research, what do you mean?

Senator ROCKEFELLER. Dr. Graham wants to see a substantial increase in basic research, as opposed to applied research. The Japanese are doing a great deal less of that than we are. It has been said today that perhaps they have been using our basic research and applying it to their products.

And I ask, do you think they ought to be doing more basic research? And secondly, if you do, do you think that they are not because we are and they know we are and they know we will continue because our universities and our basic research are not subject to government——

Mr. PRESTOWITZ. Well, partly it is just historical. It is always easier to pick up what te other guy is doing and piggyback off of that than it is to invent yourself, and it is the smart thing to do.

And in its drive for economic development, that is what Japan has done for the past 100 years. Japan is now reaching the limits of that. In fact, the Japanese are spending a lot more on basic research than they did in the past.

But you know, we have an unparallelled research infrastructure in the United States, and we did not build it overnight. And the Japanese are not going to equal us in basic research for a long time.

I think they should spend more on it, and they are spending more on it. But I do not think that we ought to focus on trying to get them to spend more on basic research. I do not think that is really our business. If they want to spend more on it, fine, they will do it. They will not do it because we tell them to; they will do it because they think it is in their own interests.

I think the key for us is us, and we spend a lot on basic research, but we cannot afford to spend it if we do not get a return on it. And so I think what we ought to focus on is getting a return.

We should not bar the Japanese from the United States, but we should assure that in any dealings that we have with Japan in research that we get something from it, you know, that we are not doing this to be philanthropic.

And I think that, because of the dichotomy of the two systems, just because of the nature of the system, we are going to have to focus on trying to get into Japan's applied research mechanisms in return for their access to our infrastructure.

I would even say that—you know, it is very popular to say, well, the Japanese should fund more research and should maybe even contribute funds to R&D in the United States, and I think that that is—that there is some validity in that. But in a swap of money for technology, it is not a good swap.

Technology is the seed corn of the future and money is just money. So while I encourage really more Japanese support of the American infrastructure that they use, I think that the real key for us is to concentrate on technology for technology.

And because the two kinds of technology are different, we are going to have to look at not getting basic out of Japan, but getting applied.

Senator ROCKEFELLER. It is said that technology and research is more and more global. Now, we are talking about a bilateral agreement between Japan and the United States. But what we do with them presumably has to set some kind of a standard for what we do with others, or perhaps you would say that I am wrong in that.

If knowledge—I mean, knowledge is sometimes less subject to trading and quotas than cars. On the other hand, if we think that way, then of course we become benign again or continue to be benign and just simply watch the pattern that you have explained continue.

How do you mesh the sort of non-boundary nature of knowledge, scientific research and technology, and our global relationships to this particularly specific and troubling and annoying unfair relationship that we have with the Japanese?

Mr. PRESTOWITZ. I want to emphasize, I do not like the word "unfair." It is a pejorative. It implies that the Japanese are doing something bad.

I do not really think that they are.

Senator ROCKEFELLER. Nothing they are doing is illegal.

Mr. PRESTOWITZ. Well, not even illegal, but I do not even think it is bad per se. I do not want to judge the Japanese.

I think what we are faced with is an imbalance, an inequality in the relationship, which redounds to the disadvantage of the United States, not because people have ill intent, but because the natural working of the two systems happens to put the United States at a disadvantage.

And the relationship between the United States and Japan is so important that I believe it is imperative for both countries to recognize that and to consciously take steps to correct it, so that the perception of unfairness which naturally arises from it does not poison the relationship.

Now, with regard to the rest of the world, we do not have the same problems with the rest of the world that we have with Japan. We might in the future in some other areas.

But at least until now, the only other area that engages in substantial research has been Europe, and the European approach to this is much more like our own and we have had much more ability to have a more balanced flow of technology between the U.S. and Europe, and so we do not have the same problems.

Now we do—you know, there are instances of it. The Europeans with their Esprit program, with the Airbus program, and so forth, have moved in some cases in directions that make life difficult. And in those cases I think we ought to apply the same principles.

I think that we do not want to close ourselves off into little cubicles. It, after all, is the spread of ideas that stimulates new ideas, that leads to more rapid development. But there has to be some balancing of the generation of the ideas.

It is hard to generate a new idea. You cannot do it every day. And if you are constantly trying to base your competitive ability on the fact that you are so superlative in generating new ideas, you are going to lose, because it is just much easier to take somebody else's and make them better than it is to think of new ones.

And so we have just got to either get more out of our own ideas, at the same time that we encourage others to think of more ideas of their own.

Senator ROCKEFELLER. Why would it be in the Japanese interest to negotiate a solid science and technology agreement with us?

Mr. PRESTOWITZ. It might not be. It probably would—the Japanese would be better off not to have one. I mean, as I say, the natural working of the two systems reall kind of gives an advantage to Japan. So from that point of view, they are better off with no agreement.

The thing that would make it advantageous to them to have an agreement is a fear that if there is not one, that their ability to participate in the U.S. system could be cut back or restricted in some way. And I guess——

Senator ROCKEFELLER. Intellectual property sometimes wanders into trade discussions. And I think the Japanese are concerned, and I know that the Koreans and the Taiwanese are concerned, about the trade bill. This subject does not seem to raise its head quite as strongly as a more muscular trade, conventional trade discussion.

Mr. PRESTOWITZ. It is much more important, much more important. We are talking about the future here, and most of the stuff we talk about in trade is the past. We talk about textiles and steel and automobiles. That is the past. We are talking about our future here.

Senator ROCKEFELLER. Well then, I would re-ask you the question. It should be in the interest of the Japanese to negotiate a bilateral agreement on science and technology, except as they see us benign and asleep or not aggressive, is that correct?

I mean, if they are looking at the long term——

Mr. PRESTOWITZ. Well, I think there are two ways of looking at it. Statesmanship is in scarce supply everywhere.

Senator ROCKEFELLER. I was not referring to a requirement for statesmanship. I was looking at, for example, what has happened to this country in trade. And trade comes to the thought of automobiles or whatever it is; it is muscular and people get angry, and then they pressure their Congressmen to pass trade bills and all kinds of things, which stir up a lot of interest.

What I am suggesting is that I agree with you, that science and technology is the next generation's or the next decade's real bilateral political problems of large magnitude not yet recognized, and that therefore again it ought to be in the interest of the Japanese to understand them.

Mr. PRESTOWITZ. Oh, yes, absolutely. But you are talking long term versus short term. A statesman in Japan looking at this hopefully would say, gee, the Americans are not going to accept us forever and we really ought to fix it.

But in the short term, it is advantageous. And despite their reputation for being very far-sighted, my experience is that the Japanese have a very difficult time actually in anticipating the need for change in the future.

Senator ROCKEFELLER. Let me follow on that for just a moment. Do you think that the Japanese feel that they are exercising reciprocity? In other words, do they—are they conscious of what is going on here and figure that the Americans will in their eternal generosity keep on this way, and therefore why really worry about it?

Or as you just indicated, do they simply not look at the long term the way we do, or have no reason right now for fear, as perhaps we do, on some of these matters?

Do you think they think they are doing what is correct and what is right, their negotiators sitting in this room?

Mr. PRESTOWITZ. Well, there are different Japanese, there are different people in Japan. Some Japanese are as concerned as you and I are. I met with Naohiro Amaya in July, who told me that his top priority was revitalization of the United States.

So I think there are some in Japan who are concerned about this. But I think that on the one hand, most Japanese do not really recognize the vast gulf in openness that separates the two societies, because they do not understand what we mean by an open society, and they do not really realize how difficult their own is to penetrate.

They do not see the same gulf that we see, and then tend therefore to think that we are crybabies and that we are just complaining because we do not try hard enough.

Senator ROCKEFELLER. Openness means naivete?

Mr. PRESTOWITZ. To some people it does, to some it does. I mean, again, there are different levels of sophistication.

I think there are many in Japanese industry who know very, very well that this is a porous system and that they can use it to get what they want, and that their system protects them. And those people will fight any kind of change.

There are others in Japan who know the same thing and who want to change it, and there are others in Japan who just do not know it and they will probably go along with not wanting to change it.

Senator ROCKEFELLER. Mr. Prestowitz, I think you have made some superb points, and I wish that those who testified before you—well, I will put it this way: I wish you had led off.

Mr. PRESTOWITZ. Thank you.

Senator ROCKEFELLER. I think you made a real contribution to this hearing. I know you have, and I am extremely grateful to you. I appreciate your being here.

I might just close this hearing in saying that I do think these are very important negotiations that are coming up. As has been suggested, science and technology has not yet made it onto our front pages adequately, but this is—I think this is a landmark agreement, either a good one or a bad one, coming up.

And I hope that our country will do what is in the mutual interest of both countries on a long term basis.

This hearing is adjourned.

[Whereupon, at 4:35 p.m., the hearing was adjourned.]

[The following information was subsequently received for the record:]

PRESENCE IS THE ISSUE.—A REVIEW OF AMERICA'S INTERNATIONAL COMMERCIAL POSITION

By

Charles F. Valentine

I recently returned to the United States after fourteen years overseas. During this period I advised multinational firms of American, European and Oriental origin in the conduct of their commercial activities outside of their national boundaries. This experience afforded me the opportunity to observe first hand the business customs and practices of each group - studying their positive and negative aspects. The differences that exist reflect commitment to ventures and the ability to plan in a comprehensive and knowledgeable fashion.

Upon my return, I heard words such as "competitiveness", "quality" and "unfair trade practices" when discussing our trade imbalance. Subsequent meetings with U.S. government officials, senior corporate executives and the press re-emphasized that these three concepts are the focal issues of our trade deficit. I have been puzzled ever since because these three issues do not reflect an accurate picture of the whole situation.

While it may be fashionable to discuss these as the causes for the decline of American international activity, I agree to a certain extent with the American correspondent for The Economist when he states that competitiveness has nothing to do with the issue. The reasons are far more complex and center about many factors including U.S. tax policy, export controls, design sophistication, and just participating in the international market place.

Rather then focus on the popular issues which serve as handy excuses for not venturing overseas at all, let us look at some of the facts.

For over ten years U.S. firms have been beating a hasty retreat from overseas. The vacuum has been filled by Japanese, other Asian, and European companies alike. This retreat has not been because competition is fierce and we have lost, rather because many American businessmen seem only able to concentrate their attention on the United States marketplace. A recent example of this retreat are U.S. multinational banks. An anticipated change in our banking laws may permit national banking for the first time in the twentieth century. This means that your regional bank may have offices throughout the country. The American banking community's response to this has been to actively withdraw from the international market and concentrate efforts here. This overseas vacuum is now being filled by Australian, Japanese, and Italian bankers, who are presently some of the most aggressive. Recently, a large American bank sold its international market to one of Hong Kong's largest banking corporations. Not only has this resulted in the loss of that market, but also the Hong Kong Bank is now acquiring majority ownership of that American bank pending Fed approval. I don't view this as a competitive issue.

Another instance of equal incredulity regards a premier American multinational which manages several manufacturing operations in a sophisticated Asian country. Producing a variety of household items ranging from appliances to curling irons, this company is that country's single largest commercial employer. In the local department stores, Braun, Krups, Phillips, Sanyo sell very well, but this company does not to sell the products it manufactures there.

Understandably this cannot be considered a question of competition, rather it is an issue of concentration. You cannot discuss competitiveness when you do not maintain a commercial presence. Consistently I have seen American firms give away markets, rather than focus efforts on them. This reflects the level of difficulty which our American firms view the foreign marketplace.

A second issue revolves about quality. Like any other manufacturing country, we suffer from variations in quality. I personally know of no country which does not experience similar discrepancies. Further, I will not argue that some of our quality has suffered in recent years. This, however, is not the issue. Rather quality is also used as a ready excuse for avoiding the actual reasons for our international trade imbalance. Many companies enjoy excellent reputations: Witness 3M Company who is the market leader in certain tape products in Japan; look at IBM which is the overall leader for computers in the world; or observe ASC Incorporated, noted for its excellent craftsmanship in creating specialty cars and convertibles among other items. The latter enjoys such a reputation that Toyota is unable to find a single defect in the convertibles it produces for that Japanese company.

If you have a good product, it will sell anywhere. Repeatedly select American firms confirm this fact. The point, however, is that a presence must exist before competition can begin.

The third circumstance concerns issues of "unfair trade practices". Granted non-tariff trade barriers do exist and are a part of daily life for any company operating internationally. Such barriers may include tax provisions, local ownership clauses, and currency restrictions, among others. There are, however, ways and means to circumvent their intent. While they are a reality of international commerce, they are equally used as handy excuses to avoid the current situation. Recently, for example, I read about certain groups which wanted to restrict imports from Singapore and Hong Kong because of "unfair trade practices". I personally was shocked because I know of no other two countries which are more committed and oriented towards the laissez-faire attitude of sink or swim. Free trade abounds in those cities and the only trade restrictions imposed are the ones self-imposed by American businesses. Sadly, Singapore and Hong Kong are not unique cases when it comes to these types of histrionics.

The issue is that many American businessmen are both baffled and frightened by the international market. Historically, our periods of trade protectionism have arisen when we, as a people, have appeared unable to either effectively enter or dominate particular niches in the international marketplace. We tend to confuse the impossibility of entering a market with the difficulty of gaining a foothold. This confusion can give rise to the concerns of "competitiveness", "quality" and "unfair trade practices"

Another fact is our own national market. As a Japanese competitor is reputed to have said: "The curse of the American businessman is the size of his market." This is the crux of our problem: our market is so big. that we tend to ignore the rest of the world. But is this true?

I am not an economist, nor do I pretend to be one. However, my immediate experience indicates that the world economies as a whole are becoming inter-related, and as a consequence we are now marching towards a true global economy. If this is true, then a market the size of the United States is no longer sufficient to support and maintain native industries. During the past fifteen years we have seen our steel, automotive and shipping industries decline as a direct result of foreign competition inside our national boundaries. We have seen large automotive firms such as Chrysler verge on bankruptcy in part because foreign divisions were sold off. We have others such as Ford which remained profitable during the early 1980s solely because of revenue contributions from foreign sales.

Examples such as these only serve to amplify the relationship between profitable domestic performance and international operations. As the world advances towards this global economy, strong domestic performance, alone, cannot ensure good corporate health.

The main concern at hand is stimulating American business' willingness to actively participate in the global marketplace and to reduce the confusion that these "international neophytes" may have. We cannot even consider the issues of "competitiveness", "quality", and "unfair trade practices" without attempting a commercial presence internationally. In brief, our reluctance to enter foreign ventures is based on the following facts from the American perspective:

A Baffling Market - Most Americans will readily admit to being perplexed when dealing with other nationalities. As one businessman related recently: "If it cost me $75,000 to open an office in Los Angeles, why will it cost me $500,000 to do the same in London?". Many of our businessmen assume that you can readily employ the business practices used in Peoria when in Rome. They are confused and "put-off" when they discover that what plays in Peoria, closed the first night in Rome. There is much truth to the old saying "When in Rome, do as the Romans".

Differing Business Practices - American businesses, in general, are oriented to short-term returns on investment. As such, American corporate culture is designed and influenced to achieve those ends. When engaging in international ventures our executives tend to assume that business deals can be rapidly completed. They fail to realize that older cultures such as the European and Oriental view time differently. A European client of mine ruefully related a story illustrating these differences: Several Americans arrived in Beijing expecting a successful and rapid conclusion to contract negotiations. They shared their enthusiasm with my client in the lounge their first evening and tended to politely ignore any proffered advice. As each day passed, he observed a noticeable decline in their exuberance. By the fourth day the Americans were morose because from their view nothing had been achieved. His conversations with them led him to conclude that the Chinese were negotiating at their normal pace and nothing was amiss. The Americans left the next day despondent.

Cultural Sensitivity - It is imperative to develop a cultural and historical awareness which we seem to lack. Inadvertent insulting behavior many times results in our loosing contracts or extending the negotiation period. For example, an oil company was about to sign a lucrative extraction contract with a Middle-Eastern nation. Prior to the signing ceremony the American executive met with the responsible Arab official in a relaxed setting. The American propped his feet on the desk with the soles facing the host. An angry host suddenly rose and left the room The contract was not signed until a year later because the American did not realize that Arabs consider the exposure of soles to be highly insulting. Such behavior is due to ignorance, not conscious bad manners. Americans need to realize that many nationalities will forego lucrative ventures if they believe that they have been insulted.

There are many success stories of American firms who have adapted to the international environment. 3M Company, MacDonald's and American Express are considered classic case histories for successful and consistent international market positioning and competition. They passed through the mire of confusion and difficulty to succeed in foreign markets. While they are not alone, such firms are few in number when considering the American business landscape. They alone cannot help to rectify our trade imbalance or assure a certain measured control of our economy. Many more are required. Companies which have prudently embarked into the global marketplace consistently prove that we can compete and compete successfully. All that is required is preparedness to offset the confusion and difficulty associated with this type of market entry.

It is slowly dawning in certain sectors of the United States that the situation must change and be turned around rapidly if our economy is to remain healthy. Some state governments are taking the vanguard in this effort, realizing that the issues are far more complex than just mounting trade missions and attending trade fairs. They realize that experienced competent advice is necessary in order to prepare various businesses prior to even seriously considering overseas ventures.

Within the private sector, companies are searching for assistance in developing well-founded strategies and tactics to effect market entry overseas. They are sourcing business advisors who are experienced in such matters.

These are steps in the right direction, but are they enough? I think not. We need to change our attitude and understanding with respect to international trade. This is absolutely essential. Protectionism is not the answer. American industry is already too

dependent on foreign suppliers to effect such an improbable course of action. I buy my shirts here and find they were manufactured in Singapore where I lived for over two years; I drive my American car and discover that many of its components are foreign supplied; Everyday I take the Metro to work in Italian fabricated rail cars. These few examples alone suggest the level of interdependence among ourselves and foreign producers.

What is required is a change in attitude and awareness. As Americans we must realize that our size and distance from other nations no longer guarantee our domestic markets. We need to develop a sensitivity that the United States is rapidly becoming a component of the global market. Because of this, we can no longer rely on our clients in Peoria, but must also recognize our customers' needs in Singapore, Rome and elsewhere. This is the reality of international trade.

In the past fourteen years, I have seen many changes in international business: the rising dominance of the Japanese; the increasing competitiveness of the Europeans; and the American retreat. Yet I have also seen salients successfully held and new beach heads seized and expanded by particular U.S. companies. I have also observed the generation of the myth of Japanese impregnability and seen it punctured by Europeans and Americans who were prepared to accept the risks as well as the rewards.

There are no simple reasons for our trade deficit. Equally, no straight forward answers exist. Yet solutions are readily available if America, the Government and business are willing to put forth the effort and venture into a new frontier. Recalling the history of the "Yankee Trader" I see no reason why we cannot take, once again, our rightful place in international commerce.

○